

ABSTRACT OF THE DISCLOSURE

An apparatus for determining the unbalance of a rotational body includes a central mounting plate with a mounting fixture on which the rotational body is received, an outer frame, and a plurality of supporting webs that connect the mounting plate to the frame. The webs are configured and arranged so that the mounting plate can pivotally vibrate about a pivot axis, and translationally vibrate in the plane of the mounting plate. A first vibration transducer measures the pivoting vibration and a second vibration transducer measures the translational vibration. The pivot axis remains in the central plane of the mounting plate which coincides with the effective plane of the translational vibration measuring transducer. In this manner, the translational vibration induced by a static unbalance, and the pivoting vibration induced by the moment unbalance are separated and then separately measured, which enables the accurate measurement of both the static unbalance component and the moment unbalance component of a dynamic unbalance. In a method using such an apparatus, all of the forces and moments originating from the rotational body are transmitted directly into and through the dynamometer element itself, without requiring any additional supporting elements.